

REMARKS

The claim amendments do not add new matter. The objections to the claims are moot in view of the amendments.

The amendments to the specification do not add new matter. These amendments are made only to expedite prosecution, without prejudice, and without disclaimer of the canceled subject matter.

At column 3, lines 13 – 19, US 5,842,340 to Bush et al. (hereinafter, “Bush”) explains that its invention is a method for controlling the catalyst oxygen storage level of a catalytic converter, in which the amount of oxygen that can be stored by the catalyst within the catalytic converter is calculated based on information received from upstream and downstream exhaust gas sensors, as well as the mass flow rate of air into the engine. At column 8, line 59 – column 9, line 5, Bush explains, the voltage from a downstream sensor is compared with a threshold value. If the voltage is greater than a threshold, then the state of the downstream sensor is set to rich, otherwise the state of the downstream sensor is set to lean. Once the state of downstream gas sensor is specified, a λ value of upstream gas sensor is compared with stoichiometry ($\lambda=1$). If the λ value of the upstream gas sensor is less than one, the state of upstream gas sensor is set to rich. Alternatively, if the λ value of the upstream gas sensor is not less than one, then upstream gas sensor is set to lean. Finally, at column 10, lines 55 – 48, Bush explains, the excess oxygen flow entering the engine can be adjusted by an engine control unit in response to rich or lean transient detected by the upstream gas sensor and the downstream gas sensor.

As stated in the specification, “[i]t is especially advantageous that use may be made . . . of a single constant lambda probe mounted downstream from the exhaust catalytic converter to regulate the operation of the internal combustion engine reliably by means of the lambda control device as a function of the oxygen balance proportional to the lambda signal, even in the absence of a control probe mounted upstream from the exhaust catalytic converter. The component cost may be advantageously reduced as a result.”

In the case of *Innovad, Inc. v. Microsoft Corporation*, the United States Court of Appeals for the Federal Circuit constructed a claim that read,

“[a] telephone dialer system, comprising ... a single, bi-state switch operable from the exterior of said case for activating said signal means to produce said sequence of dual tone modulated frequency signals during said dialing mode corresponding to said digits in said reprogrammable memory means”

The Court held that,

“[t]his language about ‘a single, bi-state switch,’ ... does not preclude a dialer unit from having other switches as long as a single switch activates the signal means to produce dial tones. The claim language explains well the function of the single switch. This language alone does not preclude other switches for other functions that may not be specified in this claim. Indeed, by using the transition term ‘comprising’ at the outset of the claim, the claim drafter signaled that an accused device could have additional elements—such as switches—beyond those expressly recited and still literally fall within the claim terms.”

Innovad, Inc. v. Microsoft Corporation, 260 F.3d 1326 at 1333 (2001). *See also AFG Indus. v. Cardinal IG Co.*, 239 F.3d 1239, 1244-45, 57 USPQ2d 1776, 1780 (Fed.Cir.2001).

In claim 1, by using the transition term “having,” Applicants have signaled that an accused exhaust system could have additional elements – even additional lambda probes – beyond those expressly recited and still literally fall within the claim terms. However, in order to fall with the claim terms a single lambda probe, in conjunction with the lambda control device, must be used to determine the increase in the amount of oxygen in the exhaust gas flow over the entire period of the lean-fuel operating phase and the decrease in the amount of oxygen in the exhaust gas flow over the entire period of the rich-fuel operating phase, in relation to a specified oxygen amount reference value, an oxygen-dependent threshold switching value-being specified which, when reached, causes switching of the lambda control device to the respective other area of operation.

As amended, claim 6 is directed to a method, comprising detecting a constant probe signal with a single lambda probe for measuring values for switching the internal combustion engine from a lean-fuel operating range to a rich-fuel operating range or from

a rich-fuel operating range to a lean-fuel operating range.

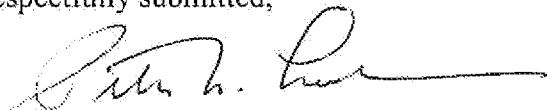
Favorable reconsideration and withdrawal of the rejection is respectfully requested.

The Director is hereby authorized to charge any deficiency in fees filed, asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account 14-1437. Please credit any excess fees to such account.

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Respectfully submitted,



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Enclosures (2): Marked-up Copy of Specification, and Clean-copy of Specification.